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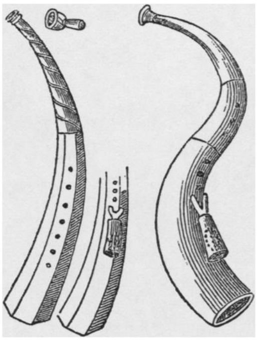
THE MUSICAL TIMES,
And Singing Class Circular.
JUNE 15th, 1855.

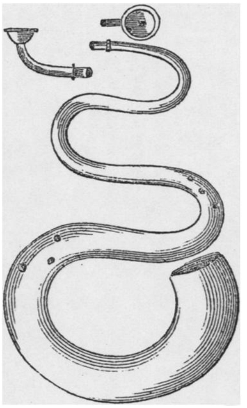
HISTORY OF MUSICAL INSTRUMENTS.

Compiled from "Sir John Hawkins's History of Music."
By James Tilleard, F.R.G.S.
From the "Educational Expositor."
(Concluded from page 6.)

Mersennus next proceeds to treat of those instruments which serve for ecclesiastical harmony; and first he describes the cornet. He says the use of it is to supply the acuter sounds, which, he says, in this instrument vibrate after the manner of lightning. The form of the Cornet in its various sizes is thus represented by him :—



The first figure is of a treble cornet, the second shows the lower part of the tenor, and the third is the bass, of the serpentine form, and is four or five feet in length. Mersennus says that the sounds of the cornet are vehement, but that those who are skilful, such as Quicklet, the royal cornetist, are able to soften and modulate them so that nothing can be more sweet. He adds, that the true and genuine bass of the cornet is the Serpent. Of this instrument Mersennus gives a particular description in Prop. XVI. And first he exhibits it in this form :—



The Serpent, he says, is thus contorted to render it commodious for carriage, its length being six feet and one inch. As it is usually made of a very brittle wood, namely, nuttree, and its thickness being but one line, or the twelfth of an inch, it is usually covered with leather, and also strengthened with the sinews of oxen glued round the first curve, which is the part by which it is held when transported from one place to another, though these precautions are unnecessary, when, as is frequently the case, it is made of brass or silver.

Mersennus mentions some peculiar properties of this instrument, and among others, that the sound of it is is strong enough to drown twenty robust voices, being animated by the breath of a boy, and yet the sound of it may be attempered to the softness of the sweetest voice. Another peculiarity of this instrument is, that great as the distance between the third and fourth hole appears, yet whether the third hole be open or shut, the difference is but a tone.

In the succeeding book, Mersennus enters into a most minute investigation of the natures and properties of the organ, bells, drums, and other instruments of percussion, and with respect to the organ in particular, he is so very precise, that were the art of organ-building lost to the world, there is very little doubt but that it might be recovered by means of this book.

Speaking of pipes, he distinguishes between such as are stopped at the ends and such as are open; between pipes of wood and metal. Assigning the effects of these different materials in the production of tones of various kinds, he shows also the use of that tongue, which being inserted into the mouth of any pipe, causes it to yield a sound like that of a reed. As to the proportion between the length and circumference of pipes, he says, it is a very difficult thing to ascertain, but that experience shows that the quadruple ratio is the cause of the best sound. This proportion is not taken from the diameter of the tube, but from the width of the plate, supposing it to be of metal, of which it is formed, which, when reduced to a cylinder, bears a ratio of about 7 to 22 to its circumference. Nevertheless, he says, that in the first order of pipes the largest is sixteen feet in length; he adds that he had seen pipes thirty-two feet long,* but that it is not in the power of the ear to form a judgment of the sounds which these produce; and these pipes he compares to chords of such an enormous length, as make but twelve returns and a half in the space of a second of time.

The difference of pipes, in respect of the acumen and gravity of their sounds, depends upon their size, for the longer the pipe is, the slower are its vibrations, and consequently the graver is its sound; and a pipe stopped at the end will produce a sound an octave lower than when open.

From these particulars respecting the pipes of an organ, their ratios, and the sounds produced by them, Mersennus proceeds to explain the mechanism of this noble instrument by a verbal description of its several parts, and representations thereof in diagrams.

From what has already been said of the organ, it appears that it is to be considered in the several views of a machine and a musical instrument; the former of these belongs to the science of mechanics, and such as are skilled therein may with wonder contemplate this noble effort of ingenuity and industry; such will be delighted to observe the means by which an instrument of this magnitude is inflated, and those contrivances of ducts and canals, whereby a due proportion of wind is distributed to thousands of pipes of different forms and magnitudes, and by what means it is so communicated as to be in readiness to obey the touch of the finger; they will wonder at the variety of sound produced by pipes, formed of the same materials differently constructed, and at the regular and artful arrangement of these for the purpose of occupying the whole of a given space; and lastly, they will be astonished at the general and universal concent of parts, which renders the whole of this stupendous machine obedient to the will of the performer.

In the consideration of the organ as a musical instrument, it is to be noted that the sounds produced by it are of various kinds, that is to say, some resemble those of the flute or pipe, allowing for the difference of shrillness or mellowness arising from the different degrees of magnitude; others have a sound, arising from the tremulous motion of the air, resembling the human voice; others imitate the clangor of the trumpet; and those orders of pipes, whether simple or compound, that in the construction of the instrument are connected together or rendered subservient to one touch of the key, are called stops.

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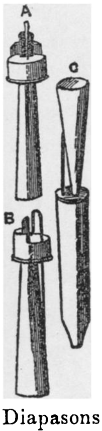
* Pipes of this length are now attached to most large organs.

The simple stops are those in which only one pipe answers to the touch of the key, these are the Diapason, Principal, Tierce, Twelfth, Fifteenth, Flute, Block-Flute, Trumpet, Clarion, Nazard, Vox-humana, Krum-horn, and some others. The compound stops are the Cornet, the Sesquialtera, Mixture, Furniture, and sundry others; and are so called because in them several pipes are made to speak at the touch of a single key, as in the Sesquialtera three, in the Cornet five, in the Mixture and in the Furniture three, four, or more; and the full organ or chorus is compounded of all.

Among pipes a distinction occurs, not only with respect to the materials of which they are formed, but also between those in which the wind is cut by the tongue, which is visible in the aperture of pipes of that class, and others where the percussion is against a reed, as it is called, though made of brass, inserted in the body of the pipe, and which answers to the Glottis or upper part of the human larynx; and of pipes thus constructed are composed the stops called the Vox-humana, Regal, Krum-horn, Trumpet, Clarion, Hautboy, and many others. The figures here exhibited represent these Glottides in different views, as also a pipe with a glottis affixed to it:—

Fig. A shows the glottis of a trumpet-pipe in front; the wire is doubled at the top, and one end thereof is bent down, and made to form a bar; the front of the glottis is made of thin brass and very elastic; the bar pressing hard against this plate, being moved upwards or downwards by the wire, opens or closes the aperture, making the sound either flatter or sharper, and this is the method of tuning pipes of this kind. Fig. B is a side view of a glottis with the aperture. In Fig. C the pipe containing the glottis is mounted on a canal or duct, which, being placed on the wind-chest, conveys the wind to the aperture, which cutting against the end of the spring, is the immediate cause of that reedy tone which distinguishes pipes of this class.



Of the pipes in an organ, those called the Diapasons are to be considered as the basis or foundation; above these succeed in regular order other simple stops, tuned in harmonical intervals to the diapasons, as the tierce or third, the sesquialtera in the ratio of 3 to 2, or the fifth; some in the octave, others in the tenth, which is the duplicate of the third, the twelfth the duplicate of the fifth, the bis-diapason, and so on to the twenty-second. By means of the Registers that command the several orders of pipes, the wind is either admitted into or excluded from them severally; and we accordingly hear the cornet, the flute, or the trumpet, &c., at the will of the performer. When all the stops are drawn, and the registers open, the wind pervades the whole instrument, and we hear that full and complete harmony, that general and universal concent, which is what the ancient writers mean to express by the term Diapason.*

Of the stops of an organ, the most usual are the Diapasons, the open and stopped, the Tierce, Sesquialtera, Flute, Cornet, Tenth, Twelfth, Fifteenth, Principal, Furniture, Mixture, Trumpet, Clarion, Hautboy, Larigot, Vox-humana, Krum-horn, and Nazard. The foreign organs, especially those of Germany, have many more, particularly that in the abbey church of Weingarten, a town in the Upper Palatinate, which has sixty-six, and contains no fewer than six thousand six hundred and sixty-six pipes. The organ at Haarlem is said to have sixty stops, many of them but little known to the English workmen, among which are the Bourdon, Gemsen-horn, the Quintadeno, Schalmey, Dulciana, Buzain, and Zink.

The organ has also keys for the feet, called Pedals, an invention of a German named Bernhard, about the year 1400. These command certain pipes, which, to increase the harmony, are tuned by the diapasons.

Among the modern improvements of the organ the most remarkable are the Swell and the Tremblant. The former, invented by an English artificer, consists of a number of pipes placed in a remote part of the instrument, and inclosed in a kind of box, which, being gradually opened by the pressure of the foot, increases the sound, as the wind does the sound of a peal of bells, or suppresses it in like manner by the contrary action. The Tremblant is a contrivance by means of a valve in the Port-vent or passage from the wind-chest, to check the wind, and admit it only by starts; so that the notes seem to stammer, and the whole instrument to sob, in a manner very offensive to the ear. In the organ at the German chapel in the Savoy, is or was a Tremblant.

In cathedral churches there were generally two organs, a large and a small. The latter, being fixed to a certain place, the French used to distinguish by the epithet Positif, used in contradistinction to Portatif, a term applied to those portable ones, which, like the Regal, may be carried about. In England it was called the choir, and by corruption the choir organ.

The foregoing account may serve to give a general idea of the organ.

The early fabricators of this instrument are as little known as they are celebrated by their works; Zarlino mentions two persons at Rome, Vincenzo Colombi, and Vincenzo Colonna, famous organ-makers in his time; but before them, viz., towards the end of the fifteenth century, there flourished Rudolphus Agricola, an admirable artist, who made the organ at Groningen. Ralph Dallans, Bernard Smith, and Renatus Harris, are names well known in Germany, France, and England, as those of excellent organ-makers. There is no method of estimating the improvement of the manual arts so satisfactory as that of comparing the works of modern artificers with those of the ancient. The mechanism of an organ at this day, proves it to be a wonderful machine, constructed with great ingenuity, and most elegantly wrought. The following figure represents an organ in the time of king Stephen, taken from the manuscript psalter of Eadwine, in the library of Trinity College, Cambridge :—

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* The following passages in some of our best poets fully justify the above sense of this word:—

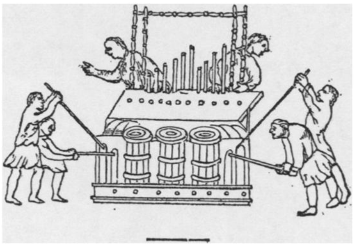
And 'twixt them both a quadrate was the base,
Proportion'd equally by seven and nine;
Nine was the circle set in heaven's place,
All which compacted, made a goodly *Dyapase*.
Farie Qveene, book II. canto ix. stanza 22.

* * * * * *

Jarr'd against nature's chime, and with harsh din
Broke the fair music that all creatures made
To their great Lord, whose love their motion sway'd
In perfect *Diapason* while they stood
In first obedience and their state of good.
Milton, at a solemn music.

Many a sweet rise, many as sweet a fall,
A full-mouth'd *Diapason* swallows all. Crashaw.

From harmony, from heav'nly harmony
This universal frame began;
From harmony to harmony
Through all the compass of the notes it ran,
The *Diapason* closing full in man.
Dryden, Song for St. Cecilia's day, 1687.



MUSIC

AMONG THE POETS AND POETICAL WRITERS.

By Mary Cowden Clarke.

(Continued from page 27.)

The singing of birds has been a theme of ceaseless rapture with the poets. Chaucer, with his talent at describing a native peculiarity in one line, denotes their ready wakefulness, where he says :—

" And smallè fowlès maken melody,
That sleepen allè night with open eye."

And he launches out perpetually in delight at their woodland music :—

" There sat I down among the fairè flow'rès,
And saw the birdès trippe out of their bow'rès,
There as they rested 'hem had all the night;
They were so joyful of the day 'is light,
They began of May for to done honourès:
They coulden well that service all by rote,
And there was many a full lovely note;
Some sungen loudè as they had yplained,
And some in other manner voice yfained,
And some sungen all out with the full throat."

* * *

" Hark! how the cheerful birds do chant their lays,
And carrol of Love's praise.
The merry lark her matins sings aloft,
The thrush replies, the mavis descant plays,
The ousel shrills, the ruddock warbles soft;
So goodly all agree, with sweet consent,
To this day's merriment.
Ah, my dear Love! why do you sleep thus long,
When meeter were that ye should now awake,
T' await the coming of your joyous make, [mate]
And hearken to the bird's love-learned song,
The dewy leaves among?
For they of joy and pleasure to you sing,
That all the woods them answer, and their echo ring."
Spenser.

" The ousel-cock, so black of hue,
With orange-tawny bill,
The throstle with his note so true,
The wren with little quill.

The finch, the sparrow, and the lark,
The plain-song cuckoo gray,
Whose note full many a man doth mark,
And dares not answer nay.—*Shakespeare.*

* * *

" From branch to branch the smaller birds with songs
Solaced the woods, and spread their painted wings
Till even; nor then the solemn nightingale
Ceased warbling, but all night tunèd her soft lays."
Milton.

* * *

Answer to a Child's Question.

" Do you ask what the birds say? The sparrow, the dove,
The linnet and thrush say, 'I love and I love!'
In the winter they're silent—the wind is so strong;
What it says, I don't know, but it sings a loud song.
But green leaves, and blossoms, and sunny warm weather,
And singing, and loving—all come back together.
But the lark is so brimful of gladness and love,
The green fields below him, the blue sky above,
That he sings, and he sings; and for ever sings he—
'I love my Love, and my Love loves me!' "—*Coleridge.*

* * *

" Along the river's stony marge
The sand-lark chants a joyous song;
The thrush is busy in the wood,
And carols loud and strong."—*Wordsworth.*

* * *

" Hark, how they warble in that brambly bush,
The gaudy goldfinch, and the speckly thrush,
The linnet green, with others fram'd for skill,
And blackbird fluting through his yellow bill."
Phillips.

* * *

" From the plains, from the woodlands and groves,
What strains of wild melody flow!
How the nightingales warble their loves
From thickets of roses that blow!
And when her[*] bright form shall appear,
Each bird shall harmoniously join
In a concert so soft and so clear,
As—she may not be fond to resign."—*Shenstone.*

* * *

" The meek-eyed morn appears, mother of dews.
At first faint-gleaming in the dappled east,
Blue through the dusk the smoking currents shine,
And from the bladed field the fearful hare
Limps awkward; while along the forest glade
The wild deer trip, and often turning, gaze
At early passenger. Music awakes
The native voice of undissembled joy,
And thick around the woodland hymns arise."
Thomson.

* * *

" Anon the sweet birds, like a sudden throng
Of happy children, ring their tangled song
From out the greener trees; and then a cloud
Of cawing rooks breaks o'er them, gathering loud
Like savages at ships; and then again
Nothing is heard but their own stately train,
Or ring-dove that repeats his pensive plea,
Or startled gull up-screaming toward the sea."
Leigh Hunt.

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[*] Phyllis—the nymph of this pasteral ballad.